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CHAMELEONS

Spiny Chameleon

Furcifer verrucosus

Furcifer verrucosus is one of Madagascar's largest chameleons and lives in the hot, dry spiny forests of the south and south-west. The male reaches up to 57 cm and has a tall casque and a crest of spines along the back, while the female is far smaller and brownish. The species is shy, drinks a lot and requires strong heat, UVB and a cool period in winter.

Family: Chamaeleonidae Former name: *Chamaeleo verrucosus*

KEY FACTS

THE ANIMAL

Adult size	**21-57 cm** total length incl. tail
Lifespan	**2-5 years**
Active	**By day**
Lifestyle	**Arboreal**
Habitat	**Semi-desert and dry forest**
Difficulty	**Experienced**

CARE

Min. enclosure	**60 × 60 × 120 cm** L × W × H for 1 adult
Temperature, day	**25-30 °C**
Basking spot	**31-35 °C**
Temperature, night	**15-22 °C**
Humidity	**40-60%**
Water	**No water dish**
UVB	**Essential** Ferguson zone 3
Winter rest	**15-25 °C** 8 weeks
Diet	**Insects**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**6-10 months**
Clutch size	**30-50 eggs**
Clutches per year	**1-2**
Incubation	**270-365 days** at 20-23 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Least Concern (LC)**

About the species

Furcifer verrucosus is among Madagascar's largest chameleons. Males reach up to 57 cm including tail, but most adult males are 40-50 cm. Females are far smaller and reach at most about 21 cm. The male has a tall casque and a dorsal crest with up to 40 spines that runs halfway out along the tail; the female has a lower casque and only 4-5 small spines on the forebody. Both sexes have a crest under the chin. The species name comes from the Latin *verruca*, wart, and refers to the enlarged scales that give the skin a warty appearance.

Males are mostly greyish brown, but turn turquoise or grass green with a white, interrupted stripe along the flank when stressed. There are several colour forms among the males, including a greenish blue one, one with a red head and a darker olive green one with longer dorsal spines. Females are grey, brown or rust-coloured with a paler belly and develop orange to red tones when receptive or gravid.

Two subspecies are distinguished, *F. v. verrucosus* and *F. v. semicristatus*, the latter found only in the far south of Madagascar. Genetically the species falls into a south-western and a south-eastern group, and the variation in the male genitalia and in the chromosomes suggests that the name may cover several species.

The species was described in 1829 by Georges Cuvier. It is shy despite its size and often sits motionless for hours on a branch, pressed against it so that it becomes hard to see. It resembles *Furcifer oustaleti* and is often confused with it, but requires a different climate, so the two species cannot be kept alike. Most animals in the trade are wild-caught, and little breeding takes place.

Read more: Buying animals: captive-bred, wild-caught and transport

Distribution and habitat

Furcifer verrucosus lives in the dry, hot regions of southern and south-western Madagascar and does not occur in the east and north. The species copes with disturbed habitat and is often seen in secondary vegetation, but prefers spiny forest where it occurs.

> **Native range:** Madagascar.

HABITAT

The habitat is dry spiny forest, which is green only in the rainy season. In the dry season the whole region turns greyish brown and parched. The remains of the spiny forest are low and dense and consist of thorny plants, introduced prickly pears and the odd baobab tree. The species also lives in bushes and scrub on sand dunes and parched clay soil.

The climate around Toliara is hot. In the rainy season (November-February) the daytime temperature easily exceeds 30 °C, and in the sun it can reach 45 °C, while rain is sparse. The monthly mean lies at 25-27 °C, with nights of 20-22 °C and days of 30-32 °C. In the dry season it is still warm by day, but in June-August the monthly mean lies at 20-21 °C, days at 26-27 °C and nights at 14-15 °C. From April to October it rains only 3-5 days a month. The difference between day and night is large all year, and many animals die in the dry season.

Care

THE ENCLOSURE

The male needs a mesh enclosure of at least 60 × 60 × 120 cm (length × width × height), the female at least 60 × 60 × 90 cm. Height is the most important, and larger is better. The animals are raised and kept separately and are put together only for mating.

The species is very shy and will often neither eat nor move when it is being watched. Screening from view is therefore just as important as physical separation. Provide dense cover with many branches of different thicknesses and live plants, and place the enclosure in a quiet spot. The animal hides by pressing itself against a thick branch, so there must be thick branches to hide behind.

TEMPERATURE

The heat requirements are similar to those of *Chamaeleo calyptratus*. By day it should be 25-30 °C with a basking spot of 31-35 °C, and at night the temperature should fall by 5-8 °C, to 17-22 °C. Measure the surface temperature of the basking branch with an IR thermometer, and use lamps of moderate output at a suitable distance, so the animal does not burn itself.

A cool period of about two months in winter corresponds to the dry season in the range and can help new, wild-caught animals settle in and control the breeding cycle. In the cool period the nights should be about 15 °C and the days at most 25 °C, as in the dry season near Toliara. A female that gets a clear cool period usually lays only one clutch a year.

Read more: Heat and temperature

HUMIDITY AND WATER

The enclosure should be kept relatively dry, about 40-60 % humidity, and dry out between mistings. Even so, the species has the same need for water as other chameleons, and the habitat is dry but often humid in the air. Provide water every day with both misting and drip. The animal drinks a lot and for a long time when it rains, and then withdraws to dry off.

Dehydration is a frequent cause of problems in new animals. Make sure they get plenty of water in the first weeks.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is diurnal and basks in open, sunny areas. Give about 12 hours of light with a T5 HO tube or a powerful LED lamp over the whole length of the enclosure. Natural sunlight without glass is good for the species.

UVB is necessary. The Ferguson zone has not been measured for the species; use zone 3 as for *Furcifer pardalis* and *Chamaeleo calyptratus*. Aim for a UV index of about 3-4 on the basking branch and shade further down, so the animal can choose. Measure with a UV meter, and replace the tube according to the manufacturer's instructions.

Read more: Lighting and UVB

FEEDING

Furcifer verrucosus is an insectivore and eats large quantities. Offer crickets, grasshoppers, flies, moths, mealworms and superworms. Adults prefer large prey. The young grow quickly and eat large quantities.

Adults are fed every other day. Dust the feeder insects with calcium with a little D3 and a vitamin supplement in small doses, and give the insects a nutritious diet 24-48 hours before feeding. Keep an eye on weight, especially in females, because obesity increases the risk of egg-laying problems. Leave the animal in peace during the meal.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

The species is shy and easily stressed by onlookers. It is not handled, and a new animal needs several weeks of peace. After arrival the animal should first have water, then food, and once it has settled in it should be treated for intestinal worms and other parasites by a vet, because wild-caught animals often have them. The treatment is less stressful once the animal has recovered from transport.

The animals are solitary and territorial and must live separately. The male's colours change to turquoise or green when he is stressed or excited.

Breeding

SEXUAL MATURITY AND SEXING

The male is far larger than the female, about twice as long and heavier still, and has a taller casque and a complete dorsal crest with long spines. The male's spines can be seen already at hatching; the female has fewer and smaller ones. The animals are sexually mature after 6-10 months, but should not be used for breeding until they are 9-12 months.

MATING

The species breeds in spring. Put a receptive female in with the male. She is receptive when her colour takes on a deeper cinnamon-red tone. If she rejects the male, take her out and try again later. If she does not reject him, matings can stretch over days or weeks. Take the female out when she turns dark and threatens the male, because these are signs that she is gravid. She should then be kept on her own.

EGG-LAYING AND CLUTCHES

The female lays the eggs 4-6 weeks after mating. She lays 30-50 eggs per clutch and 1-2 clutches a year; after a distinct cool winter usually only one. Provide her with a large container of moist potting soil where she can dig. She eats more while gravid, so provide plenty of food.

INCUBATION

The eggs are incubated at 20-23 °C for 9-12 months in a layer of vermiculite about 5 cm thick, which is moist but almost dry. After about nine months water is added to mimic the rainy season. The eggs then swell, and the thick shell becomes thin enough for the young to break out. The long incubation period is due to a resting period in embryonic development, which is common in *Furcifer*.

Read more: Incubating eggs

REARING THE YOUNG

The young are fairly easy to raise. Keep them at a humidity of 60-80 %, and give plenty of small insects every day, because they grow quickly. The animals must live separately, at the latest as they approach sexual maturity. Lifespan is not documented; other large *Furcifer* live 2-5 years. Do not cross the colour forms in breeding.

Health and common mistakes

Typical problems and husbandry errors:

- Dehydration in new, wild-caught animals. Provide plenty of water as rain and drip.
- Intestinal worms and other parasites in wild-caught animals. Let the animal settle in, and then have a faecal sample examined by a vet with reptile experience.
- Stress, because the species is very shy. The animal may stop eating.
- Metabolic bone disease (MBD) from too little UVB, calcium and D3.
- Obesity and egg-laying problems in females.
- Respiratory infections from stagnant air.
- Burns from lamps hanging too close.

Contact a vet with reptile experience if the animal does not eat, loses weight, sits dark and listless or breathes with its mouth open.

Read more: Common diseases and signs of illness

Always ask someone who knows

This guide is a good place to start, but it cannot replace experience. Animals differ, and much of what matters most is learned from people who have kept the species for years. Talk to a breeder, an experienced keeper or a vet who knows reptiles and amphibians before you get the animal - and again if anything looks wrong.